

[illegible]

4 wherein

5 A is an electrophilic group that reacts with a cysteine residue of said RdRp
6 protein;

7 Ar¹ is a member selected from the group consisting of substituted or
8 unsubstituted aryl and substituted or unsubstituted heteroaryl;

9 X¹ is a member selected from the group consisting of -H, substituted or
10 unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted
11 heteroaryl, -CN, -CO₂H, -SO₃H, -C(O)NHOH, -NH₂, -OH, -NH(lower alkyl), -O(lower
12 alkyl), -N(lower alkyl)₂, and -C(O)-NH(3-tetrazolyl);

13 L¹ is a divalent linking group selected from the group consisting of
14 -CH₂CH₂-, -CH=CH-, -C≡C-, -O-, -S(O)_n-, -N(R_a)-, -C(O)-, -C(O)O-, -SO₂N(R_a)-,
15 -CON(R_a)-, -N(R_a)CON(R_b)-, -N(R_a)N(R_b)-, -N(R_a)SO₂N(R_b)-, -N(R_a)SO₂-, -N(R_a)-O-,
16 =N-O-, lower alkylene, -O-lower alkylene, -S(O)_n-lower alkylene, N(R_a)-lower alkylene,
17 -SO₂N(R_a)-lower alkylene, lower alkylene-SO₂N(R_a)-, -CON(R_a)-lower alkylene, lower
18 alkylene-CON(R_a)-, -N(R_a)CON(R_b)-lower alkylene, lower alkylene-N(R_a)N(R_b)-,
19 -N(R_a)SO₂N(R_b)-lower alkylene, -N(R_a)-O-lower alkylene, lower alkylene-N(R_a)-O-,
20 =N-O-lower alkylene, lower heteroalkylene, -O-lower heteroalkylene, -S(O)_n-lower
21 heteroalkylene, N(R_a)-lower heteroalkylene, -SO₂N(R_a)-lower heteroalkylene, lower
22 heteroalkylene-SO₂N(R_a)-, -CON(R_a)-lower heteroalkylene, lower
23 heteroalkylene-CON(R_a)-, -N(R_a)CON(R_b)-lower heteroalkylene, lower
24 heteroalkylene-N(R_a)N(R_b)-, -N(R_a)SO₂N(R_b)-lower heteroalkylene, -N(R_a)-O-lower
25 heteroalkylene, lower heteroalkylene-N(R_a)-O-, =N-O-lower alkylene, aryl and
26 heteroaryl;

27 X² is a member selected from the group consisting of substituted or
28 unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted
29 cycloalkyl, and substituted or unsubstituted heterocycloalkyl;

30 L² is a divalent linking group selected from the group consisting of
31 -CH₂CH₂-, -(C(R_c)=C(R_d))_m-, -O-, -S(O)_n-, -N(R_e)-, -C(O)-, -C(O)O-, -SO₂N(R_e)-,
32 -CON(R_e)-, -N(R_e)CON(R_f)-, -N(R_e)N(R_f)-, -N(R_e)SO₂N(R_f)-, -N(R_e)-O-, =N-O-, lower
33 alkylene, perfluoro lower alkylene, polyfluoro lower alkylene, -O-lower alkylene,
34 -S(O)_n-lower alkylene, N(R_e)-lower alkylene, -SO₂N(R_e)-lower alkylene, lower
35 alkylene-SO₂N(R_e)-, -CON(R_e)-lower alkylene, lower alkylene-CON(R_e)-,
36 -N(R_e)CON(R_f)-lower alkylene, lower alkylene-N(R_e)N(R_f)-, -N(R_e)SO₂N(R_f)-lower
37 alkylene, -N(R_e)-O-lower alkylene, lower alkylene-N(R_e)-O-, =N-O-lower alkylene,

38 lower heteroalkylene, -O-lower heteroalkylene, -S(O)_n-lower heteroalkylene, N(R_e)-lower
 39 heteroalkylene, -SO₂N(R_e)-lower heteroalkylene, lower heteroalkylene-SO₂N(R_e)-,
 40 -CON(R_e)-lower heteroalkylene, lower heteroalkylene-CON(R_e)-, -N(R_e)CON(R_f)-lower
 41 heteroalkylene, lower heteroalkylene-N(R_e)N(R_f)-, -N(R_e)SO₂N(R_f)-lower
 42 heteroalkylene, -N(R_e)-O-lower heteroalkylene, lower heteroalkylene-N(R_e)-O-,
 43 =N-O-lower alkylene, aryl and heteroaryl, wherein R_a, R_b, R_c, R_d, R_e and R_f are each
 44 members independently selected from the group consisting of H, lower alkyl, lower
 45 heteroalkyl, -C(O)-lower alkyl, -C(O)-lower heteroalkyl, -S(O)₂-lower alkyl, and -
 46 S(O)₂-lower heteroalkyl;

47 the subscript n is an integer of from 0 to 2;

48 the subscript m is an integer of from 0 to 3;

49 the bond between X² and A can be a single, double or triple bond,

50 depending on the nature of X² and A; and

51 wherein when L¹ and L² may be linked together *via* a single bond, -O-, -S-
 52 or amide group to form a new 5 to 7 membered ring;

53 with the proviso that when A is an sp²-hybridized carbon atom and X² is substituted or
 54 unsubstituted rhodanine, L¹ is not -CH₂-CH₂-, -CH=CH-, -C≡C- or aryl.

1 10. A compound in accordance with claim 9, wherein

2 X² is selected from the group consisting of a 5 to 7 membered cycloalkyl
 3 ring, a 5 to 7 membered heterocycloalkyl ring containing from 1 to 3 heteroatoms, an aryl
 4 group and a heteroaryl group;

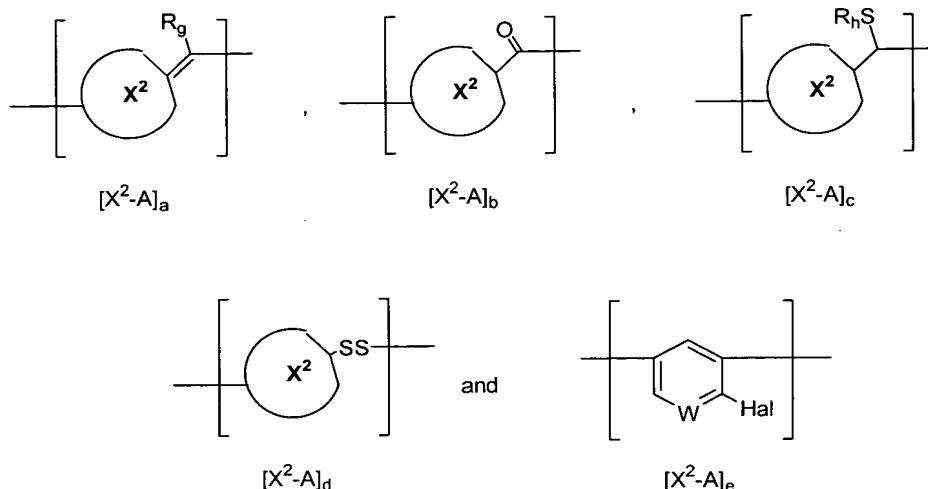
5 A is selected from the group consisting of an sp²-hybridized carbon atom
 6 and an sp³-hybridized carbon atom;

7 L² is a single bond; and

8 X² and A are joined *via* a single or double bond.

1 11. A compound in accordance with claim 10, wherein

2 X²-A- is selected from the group consisting of:

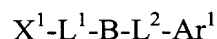


wherein R_g is selected from the group consisting of H, lower alkyl, lower alkoxy and F; R_h is selected from the group consisting of H, $-S(O)_n$ -lower alkyl, $-S(O)_n$ -lower heteroalkyl, $-S(O)_n$ -aryl and $-S(O)_n$ -heteroaryl;

W is CH or N; Hal is a halogen atom; and

X^2 is a substituted or unsubstituted member selected from the group consisting of a 5-6 membered cycloalkyl, 5-6 membered heterocycloalkyl containing from 1 to 3 heteroatoms, heteroaryl containing from 1 to 3 heteroatoms and aryl.

12. A compound having the formula (II):



wherein

Ar^1 is a member selected from the group consisting of substituted or unsubstituted aryl and substituted or unsubstituted heteroaryl;

X^1 is a member selected from the group consisting of -H, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, -CN, $-CO_2H$, $-SO_3H$, $-C(O)NHOH$, $-NH_2$, $-OH$, $-NH$ (lower alkyl), $-O$ (lower alkyl), $-N$ (lower alkyl)₂, and $-C(O)-NH$ (3-tetrazolyl);

L^1 is a divalent linking group selected from the group consisting of $-CH_2CH_2-$, $-CH=CH-$, $-C\equiv C-$, $-O-$, $-S(O)_n-$, $-N(R_a)-$, $-C(O)-$, $-C(O)O-$, $-SO_2N(R_a)-$, $-CON(R_a)-$, $-N(R_a)CON(R_b)-$, $-N(R_a)N(R_b)-$, $-N(R_a)SO_2N(R_b)-$, $-N(R_a)SO_2-$, $-N(R_a)-O-$, $=N-O-$, lower alkylene, $-O$ -lower alkylene, $-S(O)_n$ -lower alkylene, $N(R_a)$ -lower alkylene, $-SO_2N(R_a)$ -lower alkylene, lower alkylene- $SO_2N(R_a)-$, $-CON(R_a)$ -lower alkylene, lower alkylene- $CON(R_a)-$, $-N(R_a)CON(R_b)$ -lower alkylene, lower alkylene- $N(R_a)N(R_b)-$, $-N(R_a)SO_2N(R_b)$ -lower alkylene, $-N(R_a)-O$ -lower alkylene, lower alkylene- $N(R_a)-O-$,

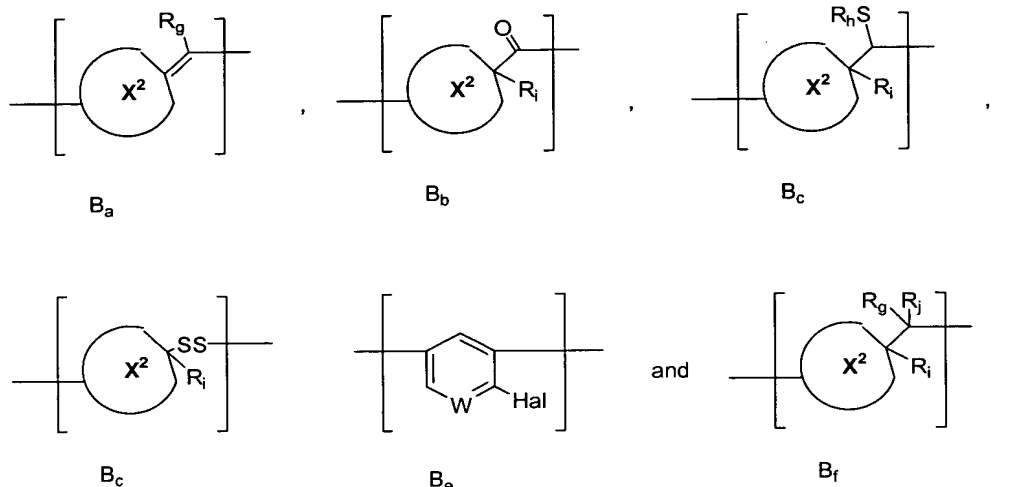
17 =N-O-lower alkylene, lower heteroalkylene, -O-lower heteroalkylene, -S(O)_n-lower
 18 heteroalkylene, N(R_a)-lower heteroalkylene, -SO₂N(R_a)-lower heteroalkylene, lower
 19 heteroalkylene-SO₂N(R_a)-, -CON(R_a)-lower heteroalkylene, lower
 20 heteroalkylene-CON(R_a)-, -N(R_a)CON(R_b)-lower heteroalkylene, lower
 21 heteroalkylene-N(R_a)N(R_b)-, -N(R_a)SO₂N(R_b)-lower heteroalkylene, -N(R_a)-O-lower
 22 heteroalkylene, lower heteroalkylene-N(R_a)-O-, =N-O-lower alkylene, aryl and
 23 heteroaryl;

24 L² is a divalent linking group selected from the group consisting of
 25 -CH₂CH₂-, -(C(R_c)=C(R_d))_m-, -O-, -S(O)_n-, -N(R_e)-, -C(O)-, -C(O)O-, -SO₂N(R_e)-,
 26 -CON(R_e)-, -N(R_e)CON(R_f)-, -N(R_e)N(R_f)-, -N(R_e)SO₂N(R_f)-, -N(R_e)-O-, =N-O-, lower
 27 alkylene, perfluoro lower alkylene, polyfluoro lower alkylene, -O-lower alkylene,
 28 -S(O)_n-lower alkylene, N(R_e)-lower alkylene, -SO₂N(R_e)-lower alkylene, lower
 29 alkylene-SO₂N(R_e)-, -CON(R_e)-lower alkylene, lower alkylene-CON(R_e)-,
 30 -N(R_e)CON(R_f)-lower alkylene, lower alkylene-N(R_e)N(R_f)-, -N(R_e)SO₂N(R_f)-lower
 31 alkylene, -N(R_e)-O-lower alkylene, lower alkylene-N(R_e)-O-, =N-O-lower alkylene,
 32 lower heteroalkylene, -O-lower heteroalkylene, -S(O)_n-lower heteroalkylene, N(R_e)-lower
 33 heteroalkylene, -SO₂N(R_e)-lower heteroalkylene, lower heteroalkylene-SO₂N(R_e)-,
 34 -CON(R_e)-lower heteroalkylene, lower heteroalkylene-CON(R_e)-, -N(R_e)CON(R_f)-lower
 35 heteroalkylene, lower heteroalkylene-N(R_e)N(R_f)-, -N(R_e)SO₂N(R_f)-lower
 36 heteroalkylene, -N(R_e)-O-lower heteroalkylene, lower heteroalkylene-N(R_e)-O-,
 37 =N-O-lower alkylene, aryl and heteroaryl, wherein R_a, R_b, R_c, R_d, R_e and R_f are each
 38 members independently selected from the group consisting of H, lower alkyl, lower
 39 heteroalkyl, -C(O)-lower alkyl, -C(O)-lower heteroalkyl, -S(O)₂-lower alkyl, and -
 40 S(O)₂-lower heteroalkyl;

41 the subscript n is an integer of from 0 to 2;

42 the subscript m is an integer of from 0 to 3;

43 B is selected from the group consisting of:



wherein X^2 is a substituted or unsubstituted member selected from the group consisting of a 5-6 membered cycloalkyl, 5-6 membered heterocycloalkyl containing from 1 to 3 heteroatoms, heteroaryl containing from 1 to 3 heteroatoms and aryl;

W is CH or N;

R_g is selected from the group consisting of H, lower alkyl, lower alkoxy and F;

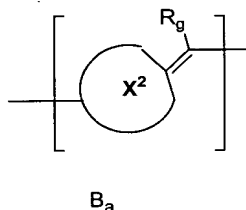
R_h is selected from the group consisting of H, $-S(O)_n$ -lower alkyl, $-S(O)_n$ -lower heteroalkyl, $-S(O)_n$ -aryl and $-S(O)_n$ -heteroaryl;

R_i is selected from the group consisting of H, lower alkyl, lower heteroalkyl, or a bond that links the atom bearing R_i with another atom in the X^2 ring;

R_j is selected from the group consisting of H, lower alkyl, F and lower alkoxy; and

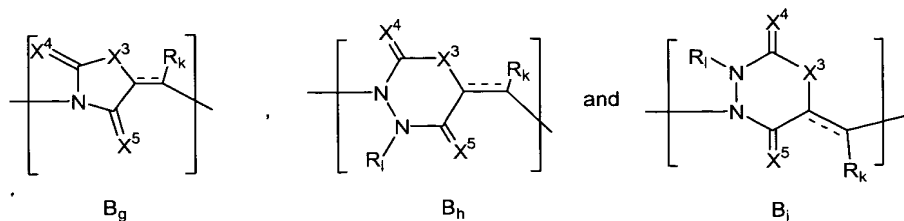
Hal is a halogen atom;

wherein when L^1 and L^2 may be linked together *via* a single bond, -O-, -S- or amide group to form a new 5 to 7 membered ring; with the proviso that when B is



65 and X^2 is rhodanine, L^1 is not $-\text{CH}_2-\text{CH}_2-$, $-\text{CH}=\text{CH}-$, $-\text{C}\equiv\text{C}-$ or aryl.

1 13. A compound in accordance with claim 12, wherein B is selected
2 from the group consisting of:



3 wherein

5 R_k is selected from the group consisting of H, lower alkyl, lower
6 heteroalkyl and F;

7 R_l is H or lower alkyl;

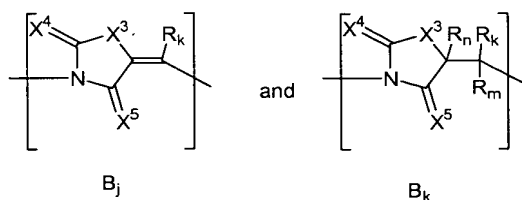
8 X^3 is selected from the group consisting of O, S, CH_2 , $\text{CH}(\text{lower alkyl})$,
9 $\text{C}(\text{lower alkyl})_2$, NH and $\text{N}(\text{lower alkyl})$;

10 X^4 is selected from the group consisting of O, S, NH and $\text{N}(\text{lower alkyl})$,
11 or X^4 and the carbon atom to which it is attached represents an sp^3 -hybridized carbon
12 having two substituents independently selected from the group consisting of H, lower
13 alkyl and lower heteroalkyl;

14 X^5 is selected from the group consisting of O, S, NH and $\text{N}(\text{lower alkyl})$,
15 or X^5 and the carbon atom to which it is attached represents an sp^3 -hybridized carbon
16 having two substituents independently selected from the group consisting of H, lower
17 alkyl, lower alkoxy, aryloxy, lower thioalkoxy and arylthioxy; and

18 --- represents either a single or double bond, with the proviso that when a
19 single bond is intended, the ring atom bearing said single bond bears an additional
20 substituent selected from the group consisting of H, lower alkyl, lower alkoxy and F.

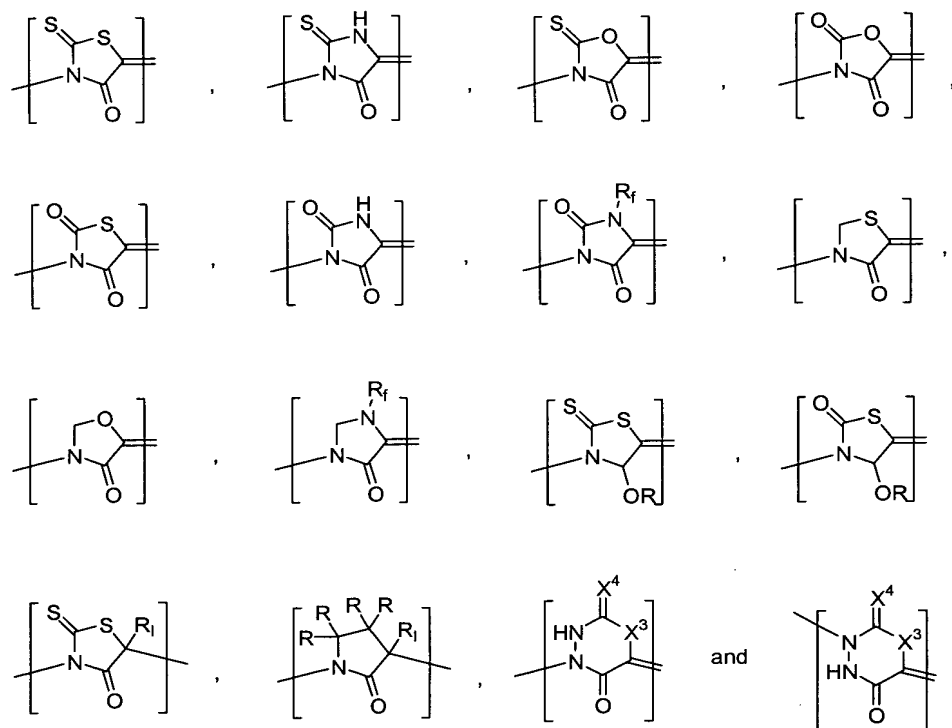
1 14. A compound of claim 13, wherein B is selected from the group
2 consisting of:



3 wherein

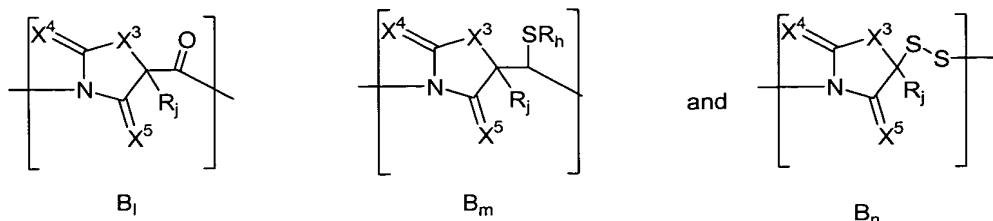
5 R_k , R_m and R_n are each independently selected from the group consisting
 6 of H, F, lower alkyl and lower alkoxy;
 7 X^3 is selected from the group consisting of O, S, C(lower alkyl)₂, NH and
 8 N(lower alkyl);
 9 X^4 is selected from the group consisting of O and S, or X^4 and the carbon
 10 atom to which it is attached represents an sp^3 -hybridized carbon having two substituents
 11 independently selected from the group consisting of H, lower alkyl and lower heteroalkyl;
 12 X^5 is selected from the group consisting of O and S, or X^5 and the carbon
 13 atom to which it is attached represents an sp^3 -hybridized carbon having two substituents
 14 independently selected from the group consisting of H, lower alkoxy and lower
 15 thioalkoxy.

1 **15.** A compound of claim 14, wherein B is selected from the group
 2 consisting of:



3
 4 wherein any unlabeled R groups are independently selected from the group consisting of
 5 H, lower alkyl, lower alkoxy and F.

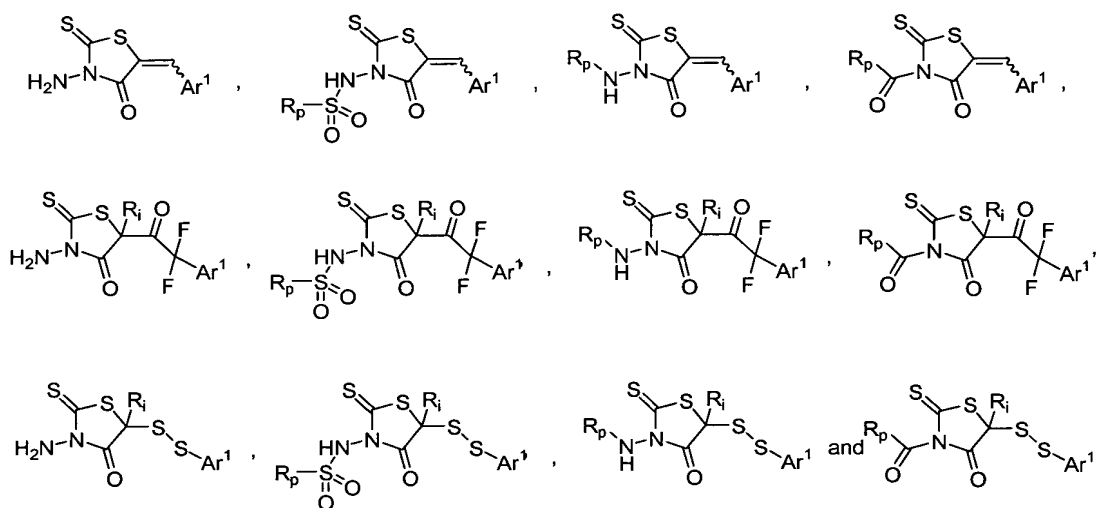
1 **16.** A compound of claim 12 wherein B is selected from the group
 2 consisting of:



17. A compound of claim 12, wherein L^1 is selected from the group consisting of $-\text{N}(\text{R}_a)-$, $-\text{N}(\text{R}_a)\text{-alkylene}$, $\text{alkylene-SO}_2\text{-N}(\text{R}_a)-$, $-\text{SO}_2\text{-N}(\text{R}_a)-$ and $-\text{N}(\text{R}_a)\text{SO}_2-$; and X^1 is selected from the group consisting of H, aryl and alkyl.

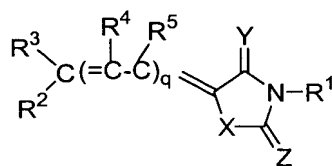
18. A compound of claim 12, wherein Ar^1 is selected from the group consisting of substituted or unsubstituted biphenyl group, substituted or unsubstituted bicyclic ring, substituted or unsubstituted phenyl group and substituted or unsubstituted pyridyl.

19. A compound of claim 17, said compound having the formula:



wherein R_p is selected from the group consisting of substituted or unsubstituted alkyl, substituted or unsubstituted aryl and substituted or unsubstituted heteroaryl.

20. A compound of Claim 12, said compound having the formula (III):

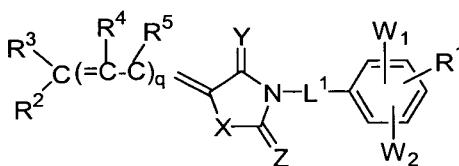


wherein

the subscript q is an integer of from 0 to 4;

5 R^1 is hydrogen or a substituent having the formula $-L^1-COOH$;
 6 X is a moiety selected from $-S-$, $-O-$, and $-N(R_o)-$, wherein R_o is H or
 7 lower alkyl;
 8 R^2 is a substituted or unsubstituted aryl(C_1-C_8)alkyl, a substituted or
 9 unsubstituted aryl(C_1-C_8)alkenyl, a substituted or unsubstituted aryl(C_1-C_8)alkynyl, a
 10 substituted or unsubstituted alicyclic group having from 5-8 carbon atoms, or a group
 11 having the formula $(R_{2a})_r-(L)_s-R_{2b}-$, wherein R_{2a} and R_{2b} can be the same or different and
 12 represent a substituted or unsubstituted heterocyclic group or a substituted or
 13 unsubstituted phenyl group, R_{2a} can also represent a substituted or unsubstituted
 14 polycyclic group, and L represents a divalent linking group selected from methylene,
 15 ethylene, propylene, $-CH=CH-$, $-C\equiv C-$, $-C(O)-$, $-O-$, $-S-$, $-S(O)-$, $-S(O)_2-$, or $-N(R_{2c})-$,
 16 wherein R_{2c} is selected from H or lower alkyl, and the subscripts r and s are each
 17 independently 0 or 1;
 18 R^3 is selected from the group consisting of H, substituted or unsubstituted
 19 (C_1-C_8)alkyl, substituted and unsubstituted aryl or substituted and unsubstituted
 20 heteroaryl;
 21 Y represents O or S; and
 22 Z represents O, S or $N(R_{2d})$, wherein R_{2d} is H or lower alkyl, or R_{2d} and R^1
 23 may be joined to form an imidazole or benzimidazole group;
 24 with the proviso that when R^1 is hydrogen, R^3 is not substituted furan.

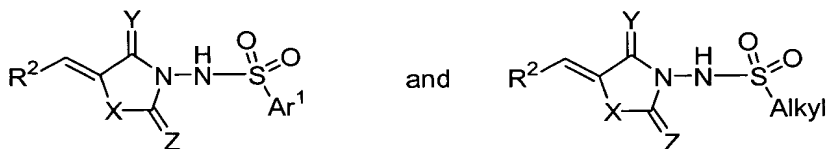
1 21. A compound of Claim 12, said compound having the formula (V):



2 wherein
 3
 4 R^1 is H, $-OH$, $-COOR_u$, $-CONR_vR_w$, $-SO_2NR_xR_y$ wherein R_u , R_v , R_w , R_x
 5 and R_y are H or lower alkyl, or R^1 is a mono-heterocyclic group selected from furan,
 6 thiophene, pyridine, pyrimidine, pyridazine, 1,3-oxathiolane, tetrazole, oxadiazole,
 7 oxazole, triazole, imidazoline, imidazole, thiazole, thiadiazole, pyrrole, piperidine,
 8 morpholine, triazine and pyrazole; and
 9 W_1 and W_2 are independently selected from H, (C_1-C_8)alkyl, (C_1-
 10 C_8)alkenyl, (C_1-C_8)alkynyl, halogen, nitro, hydroxy, perfluoroalkyl, difluoromethyl, (C_1-

11 C₈)alkoxy, phenoxy, phenyl(C₁-C₈)alkoxy, (C₁-C₈)acyl, (C₁-C₈)acyloxy, cyano,
 12 carbalkoxy, thio, (C₁-C₈)alkylthio, (C₁-C₈)alkylsulfinyl, (C₁-C₈)alkylsulfonyl, amino, (C₁-
 13 C₈)alkylamino, di(C₁-C₈)alkylamino, sulfonamido, carboxamido and (C₁-
 14 C₈)alkanoylamino.

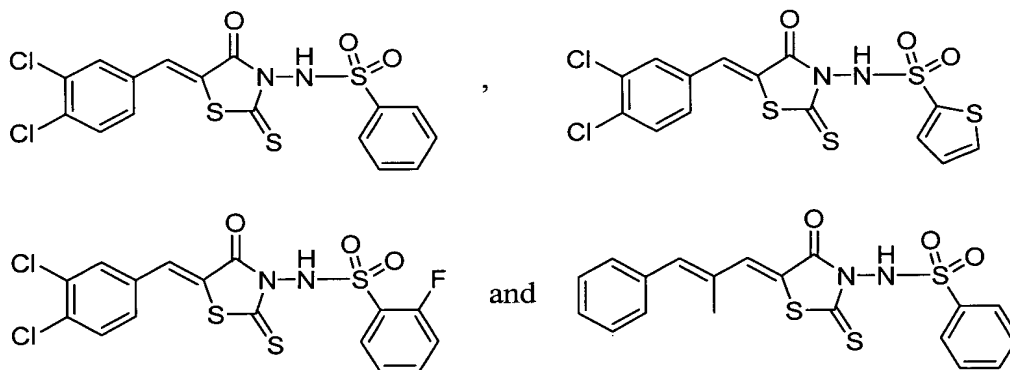
1 **22.** A compound of Claim 12, said compound having a formula
 2 selected from the group consisting of



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 4 wherein

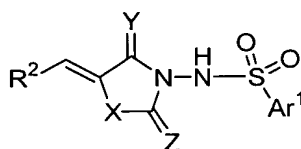
5 R² is a substituted or unsubstituted mono- or bi-heterocyclic group, a
 6 substituted or unsubstituted polycyclic ring, a substituted or unsubstituted alicyclic group
 7 having 5-8 carbon atoms, a substituted or unsubstituted phenyl group, a substituted or
 8 unsubstituted biphenyl group, a substituted or unsubstituted phenylether group, a
 9 substituted or unsubstituted cinnameryl group, or a substituted or unsubstituted stilbenyl
 10 group.

1 **23.** The compound of Claim 22, wherein said compound is selected
 2 from the group consisting of



3
 4

1 **24.** A compound having the formula (VIIa):



2

3 wherein

4 Ar^1 is selected from the group consisting of substituted or unsubstituted
5 aryl and substituted or unsubstituted heteroaryl;

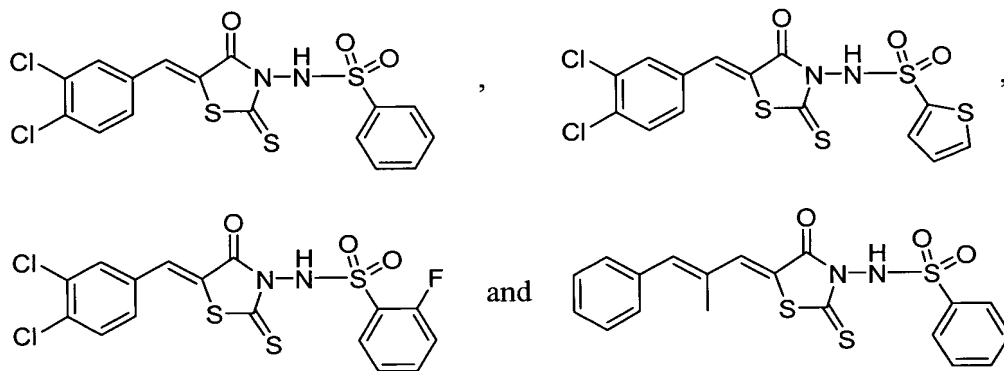
6 X is selected from -S-, -O- and -N(R₀)-, wherein R₀ is H or lower alkyl;

7 Y is O or S; and

8 Z is O, S or N(R_{2d}), wherein R_{2d} is H or lower alkyl, or R_{2d} and R¹ may be
9 joined to form an imidazole or benzimidazole group; and

10 R^2 is a substituted or unsubstituted mono- or bi-heterocyclic group, a
11 substituted or unsubstituted polycyclic ring, a substituted or unsubstituted alicyclic group
12 having 5-8 carbon atoms, a substituted or unsubstituted phenyl group, a substituted or
13 unsubstituted biphenyl group, a substituted or unsubstituted phenylether group, a
14 substituted or unsubstituted cinnamenyl group, or a substituted or unsubstituted stilbenyl
15 group.

1 **25.** The compound of Claim 24, wherein said compound is selected
2 from the group consisting of



1 **26.** A compound useful for the covalent modification of a viral RNA-
2 dependent RNA polymerase (RdRp) protein, said compound having the formula:

3 $\text{X}^1\text{-L}^1\text{-X}^2\text{-A-L}^2\text{-Ar}^1$

4 wherein

5 A is an electrophilic group that reacts with a cysteine residue of said viral
6 RNA-dependent RNA polymerase protein;

7 Ar^1 is a member selected from the group consisting of substituted or
8 unsubstituted aryl and substituted or unsubstituted heteroaryl;

9 X^1 is a member selected from the group consisting of -H, substituted or
 10 unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted
 11 heteroaryl, -CN, -CO₂H, -SO₃H, -C(O)NHOH, -NH₂, -OH, -NH(lower alkyl), -O(lower
 12 alkyl), -N(lower alkyl)₂, and -C(O)-NH(3-tetrazolyl);

13 L^1 is a divalent linking group selected from the group consisting of -O-,
 14 -S(O)_n-, -N(R_a)-, -C(O)-, -C(O)O-, -SO₂N(R_a)-, -CON(R_a)-, -N(R_a)CON(R_b)-,
 15 -N(R_a)N(R_b)-, -N(R_a)SO₂N(R_b)-, -N(R_a)SO₂-, -N(R_a)-O-, =N-O-, lower alkylene,
 16 -O-lower alkylene, -S(O)_n-lower alkylene, N(R_a)-lower alkylene, -SO₂N(R_a)-lower
 17 alkylene, lower alkylene-SO₂N(R_a)-, -CON(R_a)-lower alkylene, lower
 18 alkylene-CON(R_a)-, -N(R_a)CON(R_b)-lower alkylene, lower alkylene-N(R_a)N(R_b)-,
 19 -N(R_a)SO₂N(R_b)-lower alkylene, -N(R_a)-O-lower alkylene, lower alkylene-N(R_a)-O-,
 20 =N-O-lower alkylene, lower heteroalkylene, -O-lower heteroalkylene, -S(O)_n-lower
 21 heteroalkylene, N(R_a)-lower heteroalkylene, -SO₂N(R_a)-lower heteroalkylene, lower
 22 heteroalkylene-SO₂N(R_a)-, -CON(R_a)-lower heteroalkylene, lower
 23 heteroalkylene-CON(R_a)-, -N(R_a)CON(R_b)-lower heteroalkylene, lower
 24 heteroalkylene-N(R_a)N(R_b)-, -N(R_a)SO₂N(R_b)-lower heteroalkylene, -N(R_a)-O-lower
 25 heteroalkylene, lower heteroalkylene-N(R_a)-O-, =N-O-lower alkylene and heteroaryl;

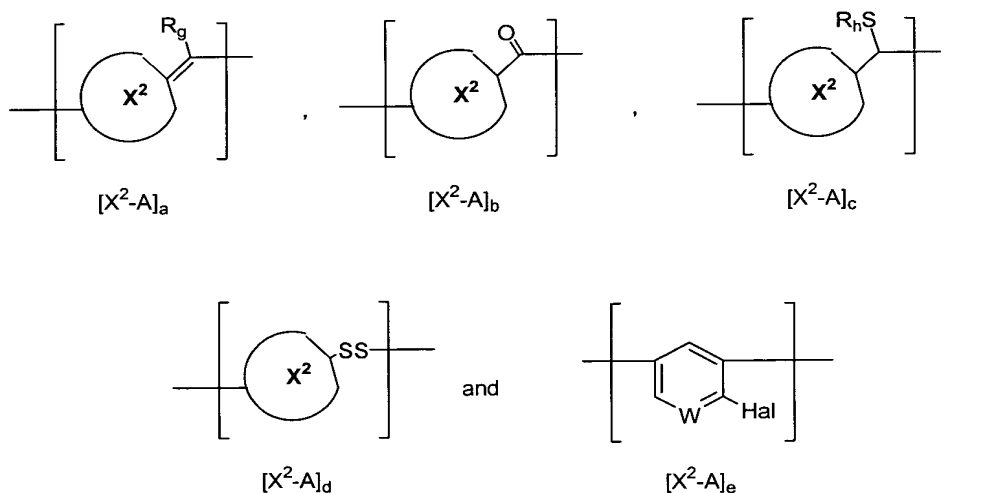
26 X^2 is a member selected from the group consisting of substituted or
 27 unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted
 28 cycloalkyl, and substituted or unsubstituted heterocycloalkyl;

29 L^2 is a divalent linking group selected from the group consisting of
 30 -CH₂CH₂-, -(C(R_c)=C(R_d))_m-, -O-, -S(O)_n-, -N(R_e)-, -C(O)-, -C(O)O-, -SO₂N(R_e)-,
 31 -CON(R_e)-, -N(R_e)CON(R_f)-, -N(R_e)N(R_f)-, -N(R_e)SO₂N(R_f)-, -N(R_e)-O-, =N-O-, lower
 32 alkylene, perfluoro lower alkylene, polyfluoro lower alkylene, -O-lower alkylene,
 33 -S(O)_n-lower alkylene, N(R_e)-lower alkylene, -SO₂N(R_e)-lower alkylene, lower
 34 alkylene-SO₂N(R_e)-, -CON(R_e)-lower alkylene, lower alkylene-CON(R_e)-,
 35 -N(R_e)CON(R_f)-lower alkylene, lower alkylene-N(R_e)N(R_f)-, -N(R_e)SO₂N(R_f)-lower
 36 alkylene, -N(R_e)-O-lower alkylene, lower alkylene-N(R_e)-O-, =N-O-lower alkylene,
 37 lower heteroalkylene, -O-lower heteroalkylene, -S(O)_n-lower heteroalkylene, N(R_e)-lower
 38 heteroalkylene, -SO₂N(R_e)-lower heteroalkylene, lower heteroalkylene-SO₂N(R_e)-,
 39 -CON(R_e)-lower heteroalkylene, lower heteroalkylene-CON(R_e)-, -N(R_e)CON(R_f)-lower
 40 heteroalkylene, lower heteroalkylene-N(R_e)N(R_f)-, -N(R_e)SO₂N(R_f)-lower
 41 heteroalkylene, -N(R_e)-O-lower heteroalkylene, lower heteroalkylene-N(R_e)-O-,
 42 =N-O-lower alkylene, aryl and heteroaryl;

wherein R_a , R_b , R_c , R_d , R_e and R_f are each members independently selected from the group consisting of H, lower alkyl, lower heteroalkyl, $-C(O)$ -lower alkyl, $-C(O)$ -lower heteroalkyl, $-S(O)_2$ -lower alkyl, and $-S(O)_2$ -lower heteroalkyl; the subscript n is an integer of from 0 to 2; the subscript m is an integer of from 0 to 3; the bond between X^2 and A can be a single, double or triple bond, depending on the nature of X^2 and A; and wherein when L^1 and L^2 may be linked together *via* a single bond, $-O-$, $-S-$ or amide group to form a new 5 to 7 membered ring.

27. A compound in accordance with claim 26, wherein X^2 is selected from the group consisting of a 5 to 7 membered cycloalkyl ring, a 5 to 7 membered heterocycloalkyl ring containing from 1 to 3 heteroatoms, an aryl group and a heteroaryl group; A is selected from the group consisting of an sp^2 -hybridized carbon atom and an sp^3 -hybridized carbon atom; L^2 is a single bond; and X^2 and A are joined *via* a single or double bond.

28. A compound in accordance with claim 27, wherein $-X^2-A-$ is selected from the group consisting of:



wherein R_g is selected from the group consisting of H, lower alkyl, lower alkoxy and F;

R_h is selected from the group consisting of H, $-S(O)_n$ -lower alkyl, $-S(O)_n$ -lower heteroalkyl, $-S(O)_n$ -aryl and $-S(O)_n$ -heteroaryl; W is CH or N; Hal is a halogen atom; and X^2 is a substituted or unsubstituted member selected from the group consisting

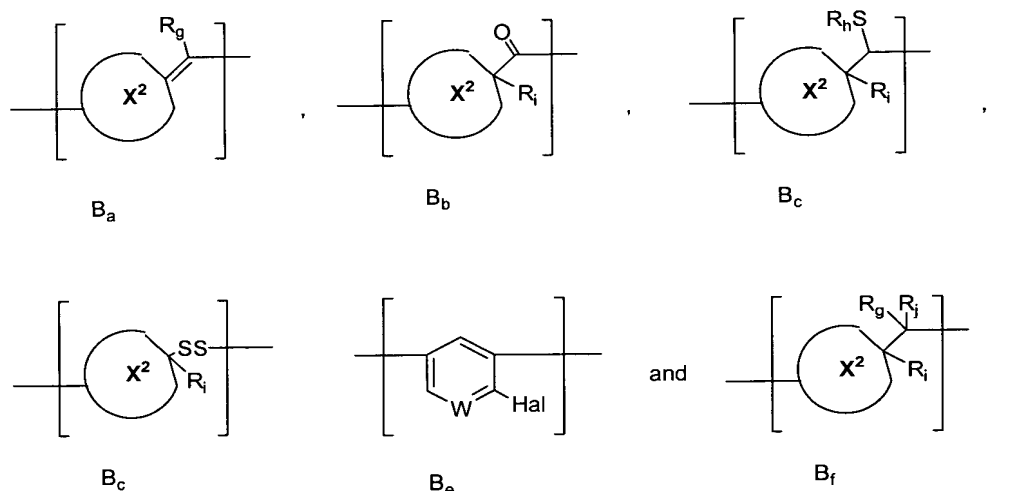
31 lower heteroalkylene, -O-lower heteroalkylene, -S(O)_n-lower heteroalkylene, N(R_e)-lower
 32 heteroalkylene, -SO₂N(R_e)-lower heteroalkylene, lower heteroalkylene-SO₂N(R_e)-,
 33 -CON(R_e)-lower heteroalkylene, lower heteroalkylene-CON(R_e)-, -N(R_e)CON(R_f)-lower
 34 heteroalkylene, lower heteroalkylene-N(R_e)N(R_f)-, -N(R_e)SO₂N(R_f)-lower
 35 heteroalkylene, -N(R_e)-O-lower heteroalkylene, lower heteroalkylene-N(R_e)-O-,
 36 =N-O-lower alkylene, aryl and heteroaryl;

37 wherein R_a, R_b, R_c, R_d, R_e and R_f are each members independently selected
 38 from the group consisting of H, lower alkyl, lower heteroalkyl, -C(O)-lower alkyl,
 39 -C(O)-lower heteroalkyl, -S(O)₂-lower alkyl, and -S(O)₂-lower heteroalkyl;

40 the subscript n is an integer of from 0 to 2;

41 the subscript m is an integer of from 0 to 3;

42 B is selected from the group consisting of:



43 wherein

44 X² is a substituted or unsubstituted member selected from the group
 45 consisting of a 5-6 membered cycloalkyl, 5-6 membered heterocycloalkyl containing
 46 from 1 to 3 heteroatoms, heteroaryl containing from 1 to 3 heteroatoms and aryl;

47 W is CH or N;

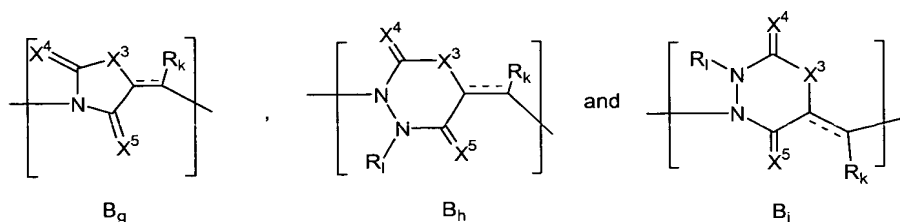
48 R_g is selected from the group consisting of H, lower alkyl, lower alkoxy
 49 and F;

50 R_h is selected from the group consisting of H, -S(O)_n-lower alkyl, -S(O)_n-
 51 lower heteroalkyl, -S(O)_n-aryl and -S(O)_n-heteroaryl;

52 R_i is selected from the group consisting of H, lower alkyl, lower
 53 heteroalkyl, or a bond that links the atom bearing R_i with another atom in the X² ring;

55 R_j is selected from the group consisting of H, lower alkyl, F and lower
 56 alkoxy; and
 57 Hal is a halogen atom;
 58 wherein when L^1 and L^2 may be linked together *via* a single bond, -O-, -S-
 59 or amide group to form a new 5 to 7 membered ring.

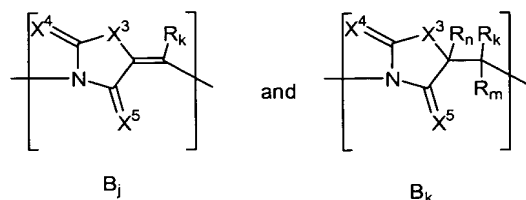
1 **30.** A compound in accordance with claim 29, wherein B is selected
 2 from the group consisting of:



3 wherein

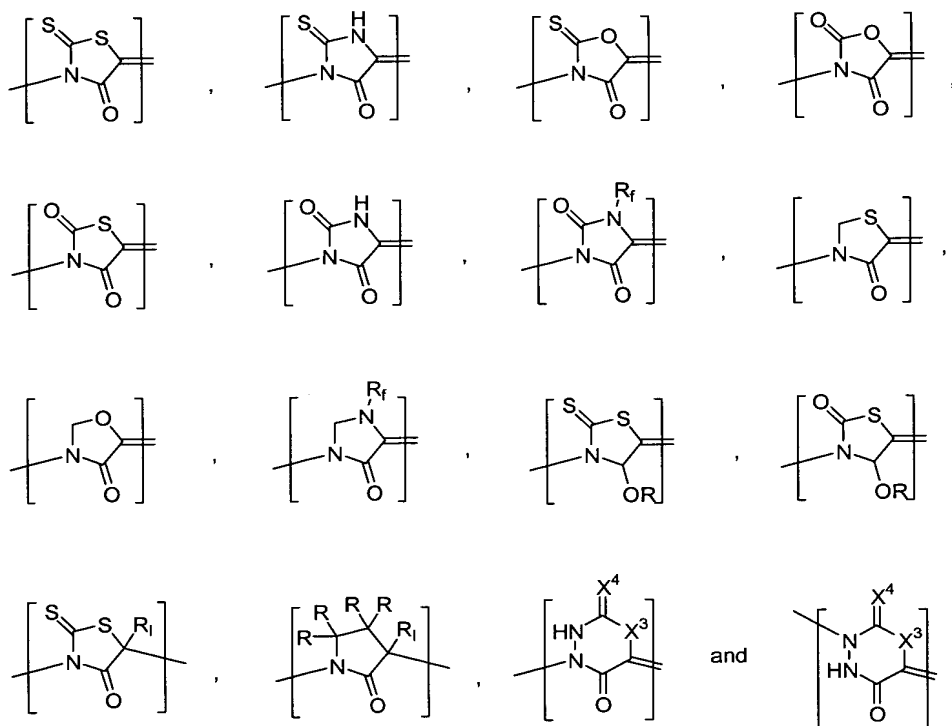
5 R_k is selected from the group consisting of H, lower alkyl, lower
 6 heteroalkyl and F;
 7 R_1 is H or lower alkyl;
 8 X^3 is selected from the group consisting of O, S, CH_2 , CH (lower alkyl),
 9 C (lower alkyl) $_2$, NH and N (lower alkyl);
 10 X^4 is selected from the group consisting of O, S, NH and N (lower alkyl),
 11 or X^4 and the carbon atom to which it is attached represents an sp^3 -hybridized carbon
 12 having two substituents independently selected from the group consisting of H, lower
 13 alkyl and lower heteroalkyl; and
 14 X^5 is selected from the group consisting of O, S, NH and N (lower alkyl),
 15 or X^5 and the carbon atom to which it is attached represents an sp^3 -hybridized carbon
 16 having two substituents independently selected from the group consisting of H, lower
 17 alkyl, lower alkoxy, aryloxy, lower thioalkoxy and arylthioxy; and --- represents either
 18 a single or double bond, with the proviso that when a single bond is intended, the ring
 19 atom bearing said single bond bears an additional substituent selected from the group
 20 consisting of H, lower alkyl, lower alkoxy and F.

1 **31.** A compound of claim 30, wherein B is selected from the group
 2 consisting of:



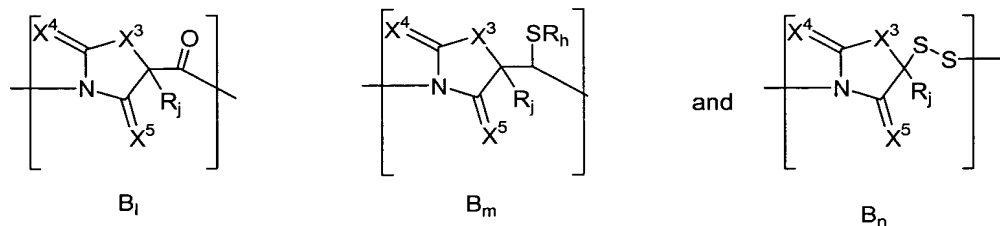
wherein R_k , R_m and R_n are each independently selected from the group consisting of H, F, lower alkyl and lower alkoxy; X^3 is selected from the group consisting of O, S, C(lower alkyl)₂, NH and N(lower alkyl); X^4 is selected from the group consisting of O, S, or X^4 and the carbon atom to which it is attached represents an sp^3 -hybridized carbon having two substituents independently selected from the group consisting of H, lower alkyl and lower heteroalkyl; X^5 is selected from the group consisting of O, S, or X^5 and the carbon atom to which it is attached represents an sp^3 -hybridized carbon having two substituents independently selected from the group consisting of H, lower alkoxy and lower thioalkoxy.

32. A compound of claim 31, wherein B is selected from the group consisting of:



wherein any unlabeled R groups are independently selected from the group consisting of H, lower alkyl, lower alkoxy and F.

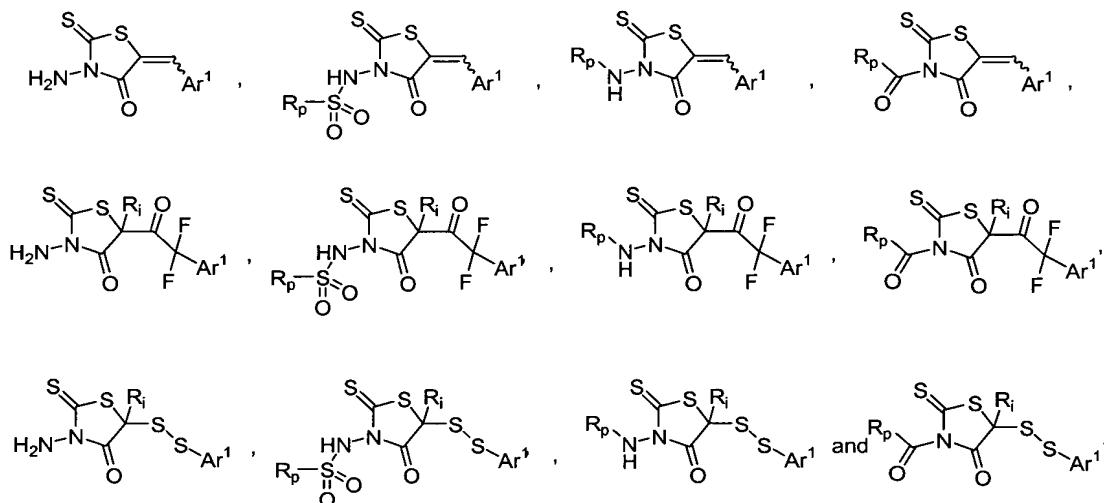
33. A compound of claim 29, wherein B is selected from the group consisting of:



34. A compound of claim 29 wherein L^1 is selected from the group consisting of $-N(R_a)-$, $-N(R_a)$ -alkylene, alkylene- $SO_2-N(R_a)-$, $-SO_2-N(R_a)-$ and $-N(R_a)SO_2-$; and X^1 is selected from the group consisting of H, aryl and alkyl.

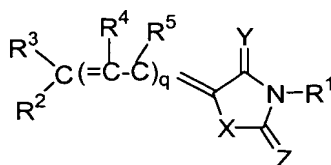
35. A compound of claim 29, wherein Ar^1 is selected from the group consisting of substituted or unsubstituted biphenyl group, substituted or unsubstituted bicyclic ring, substituted or unsubstituted phenyl group and substituted or unsubstituted pyridyl.

36. A compound of claim 34, said compound having the formula:



wherein R_p is a member selected from the group consisting of substituted or unsubstituted alkyl, substituted or unsubstituted aryl and substituted or unsubstituted heteroaryl.

37. A compound of Claim 29, said compound having the formula (III):



wherein

the subscript q is an integer of from 0 to 4;

R¹ is hydrogen or a substituent having the formula -L¹-COOH;

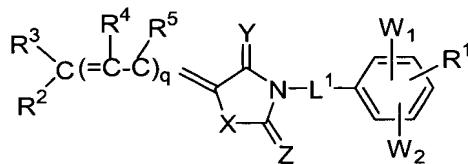
X is a moiety selected from -S-, -O-, and -N(R₀)-, wherein R₀ is H or lower alkyl;

R² is a substituted or unsubstituted aryl(C₁-C₈)alkyl, a substituted or unsubstituted aryl(C₁-C₈)alkenyl, a substituted or unsubstituted aryl(C₁-C₈)alkynyl, a substituted or unsubstituted alicyclic group having from 5-8 carbon atoms, or a group having the formula (R_{2a})_r-(L)_s-R_{2b}-, wherein R_{2a} and R_{2b} can be the same or different and represent a substituted or unsubstituted heterocyclic group or a substituted or unsubstituted phenyl group, R_{2a} can also represent a substituted or unsubstituted polycyclic group, and L represents a divalent linking group selected from methylene, ethylene, propylene, -CH=CH-, -C≡C-, -C(O)-, -O-, -S-, -S(O)-, -S(O)₂-, or -N(R_{2c})-, wherein R_{2c} is selected from H or lower alkyl, and the subscripts r and s are each independently 0 or 1;

Y represents O or S; and

Z represents O, S or N(R_{2d}), wherein R_{2d} is H or lower alkyl, or R_{2d} and R¹ may be joined to form an imidazole or benzimidazole group; with the proviso that when R¹ is hydrogen R² is not substituted or unsubstituted furan.

38. A compound of Claim 29, said compound having the formula (V):



wherein

R¹ is H, -OH, -COOR_u, -CONR_vR_w, -SO₂NR_xR_y wherein R_u, R_v, R_w, R_x and R_y are H or lower alkyl, or R¹ is a mono-heterocyclic group selected from furan, thiophene, pyridine, pyrimidine, pyridazine, 1,3-oxathiolane, tetrazole, oxadiazole, oxazole, triazole, imidazoline, imidazole, thiazole, thiadiazole, pyrrole, piperidine, morpholine, triazine and pyrazole; and

9 W_1 and W_2 are independently selected from H, (C₁-C₈)alkyl, (C₁-
10 C₈)alkenyl, (C₁-C₈)alkynyl, halogen, nitro, hydroxy, perfluoroalkyl, difluoromethyl, (C₁-
11 C₈)alkoxy, phenoxy, phenyl(C₁-C₈)alkoxy, (C₁-C₈)acyl, (C₁-C₈)acyloxy, cyano,
12 carbalkoxy, thio, (C₁-C₈)alkylthio, (C₁-C₈)alkylsulfinyl, (C₁-C₈)alkylsulfonyl, amino, (C₁-
13 C₈)alkylamino, di(C₁-C₈)alkylamino, sulfonamido, carboxamido and (C₁-
14 C₈)alkanoylamino.

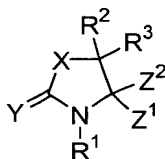
1 **39.** A compound of Claim 29, said compound having a formula
2 selected from the group consisting of



3
4 wherein

5 R^2 is a substituted or unsubstituted mono- or bi-heterocyclic group, a
6 substituted or unsubstituted polycyclic ring, a substituted or unsubstituted alicyclic group
7 having 5-8 carbon atoms, a substituted or unsubstituted phenyl group, a substituted or
8 unsubstituted biphenyl group, a substituted or unsubstituted phenylether group, a
9 substituted or unsubstituted cinnameryl group, or a substituted or unsubstituted stilbenyl
10 group.

1 **40.** A compound having the formula:



2
3 wherein

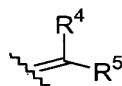
4 X is a member selected from the group consisting of O, S, NR¹¹ and
5 CR¹¹R¹² wherein R¹¹ and R¹² are each members independently selected from the group
6 consisting of H, substituted or unsubstituted (C₁-C₈)alkyl, substituted or unsubstituted
7 (C₁-C₈)alkoxy and substituted or unsubstituted (C₁-C₈)acyl;

8 Y is a member selected from the group consisting of O and S, or taken
9 together with the carbon atom to which it is attached forms a methylene group;

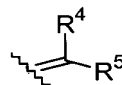
10 Z¹ and Z² are each members independently selected from the group
11 consisting of H and substituted or unsubstituted (C₁-C₈)alkoxy, or taken together form an
12 oxo moiety;

13 R^1 is a member selected from the group consisting of substituted or
 14 unsubstituted (C_1-C_8) alkyl, substituted or unsubstituted (C_1-C_8) alkylamino, substituted or
 15 unsubstituted di (C_1-C_8) alkylamino, substituted or unsubstituted (C_1-C_8) acylamino, amino,
 16 H, substituted or unsubstituted aryl (C_1-C_8) alkyl, substituted or unsubstituted
 17 heteroaryl (C_1-C_8) alkyl, substituted or unsubstituted heterocycloalkyl and $-NHSO_2-Ar^1$,
 18 wherein Ar^1 is selected from the group consisting of substituted or unsubstituted aryl and
 19 substituted or unsubstituted heteroaryl; and

20 R^2 and R^3 are each members independently selected from the group
 21 consisting of halo, substituted or unsubstituted (C_1-C_8) alkyl and substituted or
 22 unsubstituted (C_1-C_8) acyl, or taken together form a group of the formula:



23
 24 wherein R^4 and R^5 are each members independently selected from the
 25 group consisting of H, substituted or unsubstituted aryl, and substituted or unsubstituted
 26 heteroaryl, with the proviso that no more than one of R^4 and R^5 are H;
 27 with the proviso that when Z^1 and Z^2 taken together form an oxo moiety and R^2 and R^3
 28 taken together form a group of the formula:



29
 30 R^1 is not substituted or unsubstituted (C_1-C_8) alkyl or H

1 **41.** A compound in accordance with claim **40**, wherein R^1 is selected
 2 from the group consisting of amino and substituted or unsubstituted $-NHSO_2-Ar^1$.

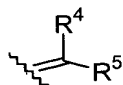
1 **42.** A compound in accordance with claim **40**, wherein Z^1 and Z^2 taken
 2 together are oxo.

1 **43.** A compound in accordance with claim **40**, wherein Y is O or S and
 2 Z^1 and Z^2 taken together are oxo.

1 **44.** A compound in accordance with claim **40**, wherein X and Y are S
 2 and Z^1 and Z^2 taken together are oxo.

1 **45.** A compound in accordance with claim **40**, wherein R^1 is selected
 2 from the group consisting of substituted or unsubstituted (C_1-C_8) alkylamino, substituted

3 or unsubstituted di(C₁-C₈)alkylamino, substituted or unsubstituted (C₁-C₈)acylamino,
4 amino, and -NHSO₂-Ar¹, wherein Ar¹ is selected from the group consisting of substituted
5 or unsubstituted aryl and substituted or unsubstituted heteroaryl; X and Y are each
6 independently selected from the group consisting of O and S; Z¹ and Z² taken together are
7 oxo; and R² and R³ taken together are a group having the formula:



8
9 wherein R⁴ and R⁵ are each members independently selected from the
10 group consisting of H, substituted or unsubstituted aryl, and substituted or unsubstituted
11 heteroaryl, with the proviso that only one of R⁴ and R⁵ is H.

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B1
1 46. A pharmaceutical composition, comprising a pharmaceutically
2 acceptable carrier and a therapeutically or prophylactically effective amount of a
3 compound of any one of claims 1, 9, 12, 24, 26, 29 and 40.

1 47. A method for the treatment or prevention of a viral infection,
2 comprising
3 administering to a subject suffering from or at risk for said viral infection
4 an effective amount of a compound of any one of claims 1, 9, 12, 24, 26, 29 and 40.

1 48. The method of Claim 47, wherein said viral infection is hepatitis C
2 virus infection.

1 49. The method of Claim 47, wherein said compound is administered
2 in combination with a therapeutically effective amount of an antiviral agent.

1 50. The method of Claim 49, wherein said antiviral agent is an
2 interferon.

1 51. A method for treating or preventing a viral infection, comprising
2 administering to a subject in need thereof a therapeutically effective
3 amount of a compound that binds to a cysteine residue in the RNA-dependent RNA
4 polymerase (RdRp) protein of a virus forming a covalent bond.

1 52. The method of Claim 51, wherein said RdRp protein is NS5B.

1 **53.** The method of Claim **51**, wherein said viral infection is hepatitis C
2 virus infection.

1 **54.** The method of Claim **51**, wherein said compound comprises an
2 electrophilic group that reacts with a cysteine residue of said RdRp protein.

1 **55.** The method of Claim **54**, wherein said electrophilic group is
2 selected from the group consisting of an activated double or triple bond, an electrophilic
3 center, a carboxylic acid or carboxylic acid derivative, a sulfur-containing group and an
4 activated or unactivated carbonyl group.

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